

LETTER FROM THE CONSERVATION FRONT LINE

Cecil, the fish

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My big fish must be somewhere

Ernest Hemingway, 'The Old Man and the Sea'

Cecil the lion is dead. If this tragedy has a silver lining, it is that the world's eyes are more open than ever before to the threat that hunting poses to wildlife. For instance, shortly after the killing of Cecil, some of the largest global airlines have reacted by banning hunting trophy shipments. Until a century ago, hunting was a noble recreational activity and a symbol of human intellectual superiority over other animals (Roosevelt & Grinnell, 1893). Now, the global commotion surrounding Cecil's death, and the stuffed animals left at the doorstep of Walter Palmer's dental practice, show us that trophy hunting is no longer compatible with the ethical principles of the 21st century (Travers, 2015). Despite the proposed potential economic and indirect conservation benefits associated by trophy hunting (Buckley & Mossaz, 2015; Fischer *et al.*, 2015), few of us want to have a lion's head hanging in the room, nor even to wear a fox fur shawl.

However, many of us still want to have (or already have) a photo of ourselves, posted on social media, smiling while holding a big fish. Today, trophy fishing is an activity with strong cultural roots, legally supported and massively developed worldwide in a similar model to the hunting of mammals and birds in the past. A large, landed fish is a trophy, even if the species is threatened (Shiffman *et al.*, 2014). This search for big fish is one of the major motivations of recreational fishing, a pastime practiced by around 11.5% of the world's population, who harvest billions of fish annually (Cooke & Cowx, 2004). For instance, fishing tournaments, in which anglers need to catch the largest fish to win the prize, are a multibillion dollar global industry (Hunt, Ethridge & Rogers, 2011). However, as opposed to current trophy hunting practices, 'trophy' fishing is practiced not only for recreation. Commercial fishing – from individual fishermen to the mechanized fisheries industry – target large individuals because they yield more meat and are more valued. Thus, although fundamentally different, both recreational and commercial fishing commonly aim to catch big fish and, hence, the oldest, most fecund and healthiest individuals (Birkeland & Dayton, 2005). This strong preference for large fish has undesirable conservation, ecological and evolutionary consequences. Alarmingly,

historical size-selective overharvesting of fish species in marine and freshwater environments has led to dramatic socioeconomic losses, local fish extinctions, downsizing of individuals, earlier reproduction and the loss of ecosystem services associated with fish (Hutchings, 2000; McClenachan, 2009; Palkovacs, 2011; Costa-Pereira & Galetti, 2015).

Within less than a century, the world is reacting differently to the image of a large mammal killed by a hunter. In contrast, even today fish are commonly seen only as food resources rather than important components of wildlife and ecosystems. A clear instance of this are the annual million tons of global discards in commercial fisheries due to by-catch (Alverson *et al.*, 1994; Kelleher, 2005). Imagine if there were piles of carcasses of jackals and cheetahs that had been shot by mistake during a lion hunt! Will the image of a large hooked fish ever cause the impact as the slaying of Cecil? Maybe not, after all, large mammals are considered more charismatic than most fish species (Morris, 1967). However a change in the public attitude towards trophy fishing certainly would help to improve management strategies for fish populations, fish welfare regulations and, ultimately, the fate of aquatic ecosystems. In this sense, the contribution of conservation scientists is vital to better understand the multiple consequences of trophy fishing – particularly in the poorly studied inland waters (Allan *et al.*, 2005) – and to disseminate their results effectively to a wide and nonspecialist audience. Finally, quoting Ernest Hemingway in his famous book *The Old Man and the Sea*, 'I shouldn't have gone out so far, fish,' he said. 'Neither for you nor for me. I'm sorry, fish'.

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References

- Allan, J.D., Abell, R., Hogan, Z., Revenga, C., Taylor, B.W., Welcomme, R.L. & Winemiller, K. (2005). Overfishing of inland waters. *Biosci.* **55**, 1041–1051.

- Alverson, D.L., Freeberg, M.H., Murawski, S.A. & Pope, J.G. (1994). A global assessment of fisheries by catch and discards. *FAO Fish Tech. Pap.* **339**, 1–233.
- Birkeland, C. & Dayton, P.K. (2005). The importance in fishery management of leaving the big ones. *Trends Ecol. Evol.* **20**, 356–358.
- Buckley, R. & Mossaz, A. (2015). Hunting tourism and animal conservation. *Anim. Conserv.* **18**, 133–135.
- Cooke, S.J. & Cowx, I.G. (2004). The role of recreational fishing in global fish crises. *Biosci.* **54**, 857–859.
- Costa-Pereira, R. & Galetti, M. (2015). Frugivore downsizing and the collapse of seed dispersal by fish. *Biol. Cons.* **191**, 809–811.
- Fischer, A., Tibebe Weldesemaet, Y., Czajkowski, M., Tadie, D. & Hanley, N. (2015). Trophy hunters' willingness to pay for wildlife conservation and community benefits. *Conserv. Biol.* **29**, 1111–1121.
- Hunt, G., Ethridge, J. & Rogers, V. (2011). Enterprise risk management for fishing tournaments. *J. Bus. Case Stud.* **7**, 35–59.
- Hutchings, J.A. (2000). Collapse and recovery of marine fishes. *Nature* **406**, 882–885.
- Kelleher, K. (2005). Discards in the world's marine fisheries: an update. *FAO Technical Paper No.* 470 pp.
- McClenachan, L. (2009). Documenting loss of large trophy fish from the Florida keys with historical photographs. *Conserv. Biol.* **23**, 636–643.
- Morris, D. (1967). *The naked ape*: London: Jonathan Cape.
- Palkovacs, E.P. (2011). The overfishing debate: an eco-evolutionary perspective. *Trends Ecol. Evol.* **26**, 616–617.
- Roosevelt, T. & Grinnell, G.B. (1893). *American big game hunting*: New York: Forest and Stream.
- Shiffman, D.S., Gallagher, A.J., Wester, J., Macdonald, C.C., Thaler, A.D., Cooke, S.J. & Hammerschlag, N. (2014). Trophy fishing for species threatened with extinction: a way forward building on a history of conservation. *Mar. Policy* **50**, 318–322.
- Travers, W. (2015). A major misfire. *New Scientist* **227**, 22–23.